

REMARKS/ARGUMENTS

This letter is responsive to the Office Action dated August 19, 2004. This Response is accompanied by a request for a one month extension of time, accordingly, it is respectfully submitted that the Response is timely filed.

Concurrently herewith, the applicant has filed an Information Disclosure Statement under 37 U.S.C. 1.97(c). It is respectfully submitted that the Information Disclosure Statement is properly filed and may be considered by the Examiner. All of the art set out in the Information Disclosure Statement was cited during the prosecution of the parent application which has now issued as United States Patent No. 6,736,873.

By this Response, the applicant has cancelled claims 11 - 15 without prejudice and inserted new claims 16 - 22. Accordingly, the application now contains one independent claim and 17 claims in total. Accordingly, no excess claim fees are payable.

In the Office Action, the Examiner rejected claims 1, 2, 4, 5 and 7 under 35 U.S.C. 102(b) as being clearly anticipated by Japanese reference (3-30). In rejecting the claims in view of this reference, the Examiner stated that the reference teaches a vacuum cleaner having a "fluid conduit (18) integrally formed as part of the cyclone container". The applicant has delayed filing the Response while it has obtained a translation of this Japanese reference. A copy of the translation is attached as Exhibit "A" for the Examiner's reference. In addition, the applicant has attached as Exhibit "B" a photo enlargement of Figures 2 and 3 of the reference. As shown in the photo enlargement, "fluid conduit (18)" appears to be a separate element from the top surface of the cyclone container. In particular, as indicated at the end of line A which the applicant has added to Exhibit "B", Figure 3 discloses a line extending between the bottom of element 18 and the outer surface of the top of the cyclone container. The presence of this wall indicates that the top surface and element 18 are separate elements.

In addition to the forgoing, the applicant refers the Examiner to the translation of the Japanese reference which the applicant has obtained. As set out in the last two lines of page 2 of the translation, element 18 refers to a "rotatable

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connector". As shown in Figure 2, hose 13 connects the air outlet from a cyclone dust collector 14 to the motor in casing 12 of a vacuum cleaner. Hose 13 is connected to discharge port 16 (i.e. the air outlet from cyclone dust collector 14). In particular, rotatable connector 18 is mounted over discharge port 16 and rotatable connector 18 is connected with hose 13. Accordingly, as element 18 is a rotatable connector, it can not be integrally molded as part of cyclone collector 14.

Further, the translation does not provide that any of the air conduits are integrally molded as part of the cyclone container. Accordingly, based upon the drawings and the translation, the applicant respectfully submits that the Japanese reference does not teach the use of a fluid conduit that is integrally formed as part of a cyclone container. Accordingly, the application respectfully submits that claim 1, and the claims dependent thereon, are not anticipated by the Japanese reference.

The Examiner also rejected claims 1, 2, 3, 4, 5 and 7 under 35 U.S.C. 102(b) as being clearly anticipated by Lee. In particular, the Examiner stated that fluid conduit 41 of Lee is integrally formed as part of the cyclone container. The Examiner has referred in particular to Figure 1 of Lee.

The applicant attaches hereto as Exhibit "C" an enlargement of Figure 1 of Lee. As shown in this enlargement, reference numeral 40 points to the exterior wall of the cyclone container. At the bottom of the cyclone container, the exterior wall curves around and forms a generally "U" shaped portion. Conduit 41 is shown positioned interior of the U shaped portion and, in fact, is shown as extending beyond the U shaped portion to flange 34. In addition, the applicant points out that the cross hatching on conduit 41 is in a different direction to the cross hatching for the side wall of the cyclone container (reference numeral 40).

An alternate embodiment of Lee is shown in Figure 7. In figure 7, the details of the bottom of the side wall of the cyclone container 40 and conduit 41 is shown in more clarity. As shown therein, conduit 41 is shown as abutting against the U shaped portion at the bottom of the cyclone container but not being formed integrally therewith. The applicant respectfully submits that Lee does not teach the use of a conduit which is integrally formed as part of a cyclone container. Accordingly, the

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applicant respectfully submits that claim 1, and the claims dependent thereon, are not anticipated by Lee.

In the Office Action, the Examiner rejected claims 11 – 15 under 35 U.S.C. 101 as claiming the same invention as that of claims 16 – 20 of prior United States Patent No. 6,736,873. By this Response, the applicant has cancelled claims 11 – 15 without prejudice.

The Examiner also rejected claims 1 – 10 under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 12 – 15 of United States Patent No. 6,736,873. By this Response, the applicant has filed a terminal disclaimer. As noted by the Examiner in the Office Action, a timely filed terminal disclaimer may be used to overcome an actual or provisional rejection based upon non-statutory double patenting. Accordingly, the applicant respectfully submits that claims 1 – 11 are allowable with the filing of the terminal disclaimer. Please charge the required government fee of \$130.00 to our deposit account #02-2095.

Applicant respectfully requests that a timely Notice of Allowance be issued in this case

Respectfully submitted,

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Exhibit "A"

Patent of vacuum cleaner

1, Name of invention

Vacuum cleaner with cyclone dust collector

2, Scope of special patent

Fan motor is inbuilt. The inlet for dust locates on top & outlet for air locates at the bottom. The outlet for dust & sucking device which connect with inlet for dust has cyclone dust collector, and It possesses the function to support dust collector rotating flexibility & freely.

3, the detailed description of the invention (utilization range in industrial fields)

The present invention: the cyclone dust collector is employed in this vacuum cleaner (Original technique)

When the conventional vacuum cleaner collects the liquid or the dust with liquid, It will result the insulation more inferior or power leakage because liquid invaded into fan motor or electric part. And thereby the liquid & the dust with liquid collecting efficiency will be decreased. So for solving the above problem, we employ the cyclone dust collector for the vacuum cleaner to separate & suck the liquid from dust. We have issued a communiqué #59-165148 for the above.

Fig. 12 is a perspective view showing an example of a conventional vacuum cleaner. As shown in Fig. 12, the vacuum cleaner includes detachable hose which connecting the inlet of cleaner body, a suck pipe 2, a cyclone dust collector 3, which is detachable with the hose connecting the cleaner body & suck pipe, for separating and collecting the water from the sucked air, The round container 4 located on the top of cyclone dust collector & the outside of the top area of 4 connects with suck pipe 5, The top center connects with outlet pipe 6, The bottom center of the cone part 7 is the vent of dust & connects a dust bin 9, At bottom, the one end of detachable suck pipe 2 connects with a detachable suction body, the other end is connected at suction pipe 5. The front pipe 11 of hose 1 is detachable with outlet pipe.

During operation of the vacuum cleaner, the fan motor inbuilt vacuum cleaner (no fig.) start generating the suction force. The suction body sucks dust, air etc. The dust & air passes suction body & pipe which drawn into dust collector.

As described the above, The air is rotating & flowing. At this moment, the water in air, moisture contaminant & relatively larger particles drops from the inside surface of container 4 due to the influence of centrifugal force. They are collected into the dust bin 9 through the connector 8. Finally, the liquid or contaminant are discarded from container.

(invention for solving the studied topic)

The original vacuum cleaner is structured stated above, so the existing problems are as below:

- (1) The weight of dust collecting container 3 will weigh in hose 1, especially the weight of dust accumulating in 3. They overloaded with the weight of hose & makes inconvenience usage.
- (2) The dust collecting container 3 will be tilted so that the dust & water flows out because of no reversing connector between container 3 & hose when reversing hose.
- (3) When cleaning higher locations, it causes the water flowing out easily which accumulated in container 3.
- (4) The connecting part between hose 1 & container 3 is deformed easily as the heavy burden is more weighted because of no reversing connector between container 3 & hose when reversing hose.

The present invention has been made to solve the problem stated above. Accordingly, it is an object of the present invention to decrease the heavy of burden & be convenient for operation, prevent water & dust outflow from cleaner, especially for preventing connecting part deformed between container & hose.

(method to solve the subject)

The present invention vacuum cleaner which the motor fan is inbuilt of. The suction inlet locates on the upper wind of fan & the outlet connecting with hose locates at the lower wind side of fan. The outlet connecting with suction inlet, the suction inlet connecting with suction body, stated above, & cyclone dust collector have feature of flexible & freely rotation.

(function)

The present vacuum cleaner not only supports the suction body & cyclone dust collector rotatably, but also the rotation of connecting handle between suction body & cyclone dust collector will not increase the heavy burden of hose. It is convenient for cleaning & prevents the water-outflow, especially preventing the connector between vacuum cleaner & hose being deformed.

(example of invention)

Hereinafter, a fact example will be described as inform of fig. (it is only simulation diagram, not product diagram & this part of description doesn't tally with diagram): Refer to fig. 1 & fig. 2, A body casing 12 of an on-floor movable type vacuum cleaner incorporating a motor driven blower has a suction port upstream of the motor driven blower, and a discharger port downstream of the same. A first hose 13 is connected at one end, rotatably to the suction port of the body casing 12, and a cyclone dust collector 14 for separating moisture from dust and for trapping them has a suction port 15 and a discharge port 16 which are provided respectively with rotatable connectors 17, 18. The connector 18 is connected with the other end of the first hose 13. Refer to

fig. 3, cyclone dust collector 14 generating a swirling vortex (refer to fig. 4) from an inflow of air, dust & larger particle contaminants that have been drawn in. The dust mixed with water & larger particle contaminants falls into the bottom due to centrifugation force. A turntable 20 rotatably supports the cyclone collector 14 thereon. A second hose 21 is connected at its one end to the connector 17 and at the other end to end of a pipe 22 whose other end is connected to a suction body 23. User opens the cyclone lid & empties the dust from container. Circulating of airstreams. Since the cyclone collector 14 is supported rotatably on the turntable 20, it is smoothly rotated in association with the movement of the second hose 21, and accordingly, the suction body 23 may be moved in a wide range.

Besides, the connector 17 & 18 connects with the suction inlet & outlet respectively. According to this example, for rotating smoothly, reducing the heavy burden of connector 17 & 18 & moving the suction nozzle into a wide range. Due to rotation of a jet stream in cyclone dust collector 14, it generates static electricity. Cyclone dust collector and turntable. To give an example about metallic oxide, we can wire a earth wire to prevent static electricity. Furthermore, For making clear judgment & observation to the internal status of dust container 14, we can make the dust container become transparent or half-transparency.

For example according to above stated, using the support turntable to change the direction of cyclone dust container & the rotation character of connector 17, 18 connecting with hose 13 & 21 move suction nozzle to a wide range. In fig. 7, if the bottom of support turntable installs 2 or more rotating wheels, it will enlarge the moving range of suction nozzle.

And, in fig. 8, container lid have suction inlet connector 17 & outlet connector 18 which make the connector part 28 between lid & cyclone dust collector rotating smoothly. Not only for this, Fig. 9 is the magnified drawing of the lid in Fig. 8 & dust collecting part 27. 29 is iron shell lining. Because of the handle located on the top as showed in fig. 10, it can clean via raising the cyclone dust collector device. The suction nozzle can suck the dust in a wide range, and it will not result the outflow of dust & water. Besides, the handle in Fig. 10 can be modified to rotating mode (see Fig. 11) for easy operation.

Effects of the present invention

As described above, the present invention can support cyclone dust collector rotating smoothly, reducing the torsion generated from the connecting part of vacuum cleaner and hose, moving suction body in a wide range, cleaning easily & making the efficiency of cleaning dust better.

4. Brief description of the drawings

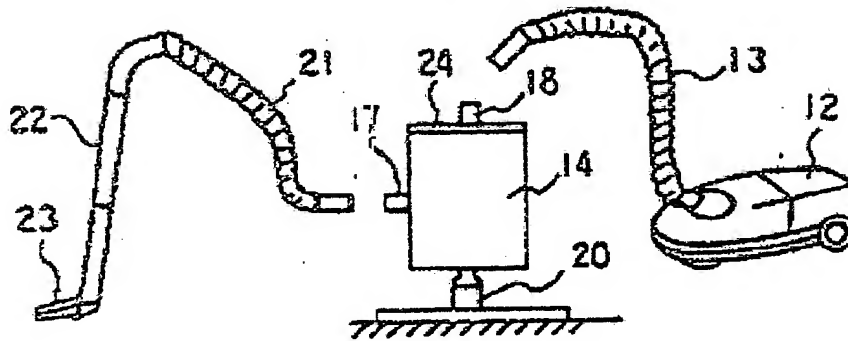
Fig. 1 is a perspective view illustrating the example of the present invention
Fig. 2 is an exploded perspective view of a cyclone dust collector.
Fig. 3 & 4 are airflow movement view of the inside of cyclone dust collector
Fig. 5 & 6 are operation status diagram of fig. 1 (example)
Fig. 7 to Fig. 11 the different gradation diagram of the invention
Fig. 12 is a structure diagram of the conventional vacuum cleaner
12 is main unit. Part 14 is cyclone dust collector
Besides, the selfsame sign stands for the same or identical



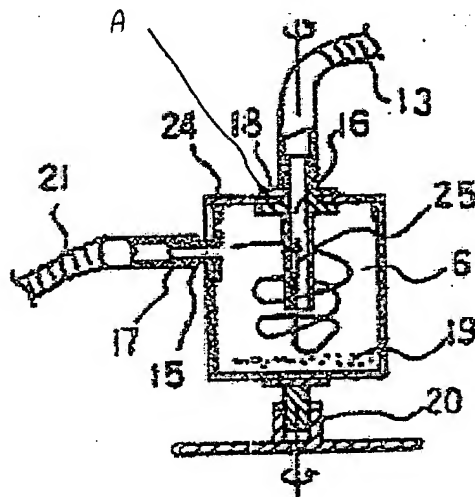
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Exhibit "B"

第 2 圖



第 3 圖





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Exhibit "C"

